



Effects of climate events driven hydrodynamics on dissolved oxygen in a subtropical deep reservoir in Taiwan

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Abstract:

The seasonal concentrations of dissolved oxygen in a subtropical deep reservoir were studied over a period of one year. The study site was the Feitsui Reservoir in Taiwan. It is a dam-constructed reservoir with a surface area of 10.24 km² and a mean depth of 39.6 m, with a maximum depth of 113.5 m near the dam. It was found that certain weather and climate events, such as typhoons in summer and autumn, as well as cold fronts in winter, can deliver oxygen-rich water, and consequently have strong impacts on the dissolved oxygen level. The typhoon turbidity currents and winter density currents played important roles in supplying oxygen to the middle and bottom water, respectively. The whole process can be understood by the hydrodynamics driven by weather and climate events. This work provides the primary results of dissolved oxygen in a subtropical deep reservoir, and the knowledge is useful in understanding water quality in subtropical regions.

Source: <http://dx.doi.org/10.1016/j.scitotenv.2007.12.018>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Quality

Extreme Weather Event: Hurricanes/Cyclones

Food/Water Quality: Chemical

Geographic Feature:

resource focuses on specific type of geography

Freshwater, Other Geographical Feature

Other Geographical Feature : Subtropical

Geographic Location:

resource focuses on specific location

Non-United States

Climate Change and Human Health Literature Portal

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Taiwan

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content